

### **III. REMARKS**

Claims 1-10 were pending in the above-identified application. Claims 1, 3, 4, 5, 8, and 10 have been amended. No claims have been cancelled, and no new claims have been added. Accordingly, claims 1-10 are pending and under examination. Applicant respectfully requests favorable reconsideration and allowance of the application.

#### **35 U.S.C. §101 & §112 Rejections**

Claims 1-7 have been rejected under 35 U.S.C. §112, 2<sup>nd</sup> paragraph, as being indefinite, and under 35 U.S.C. §101 for lacking utility. More specifically, it is alleged that the claims are unclear with regard to what method is intended to be encompassed, and that the recitation of a use without setting forth any steps results in an improper process claim. Applicant respectfully traverses the rejections.

Applicant notes that claims 6 and 7 are product, not method, claims and therefor should not be rejected as being unclear methods or improper process claims. With regard to claims 1-5, Applicant has amended independent claims 1, 3, 4, and 5 to now recite the "method comprising providing" the recited compound(s) to a fragrance application. Support for this amendment can be found, for example, from page 3, line 15 to page 4, line 14 of the specification. Applicant respectfully requests that the Examiner withdraw the rejections of claims 1-7 under 35 U.S.C. §112, 2<sup>nd</sup> paragraph and 35 U.S.C. §101.

Claim 8 has also been rejected under 35 U.S.C. §112, 2<sup>nd</sup> paragraph, as being indefinite. Specifically, the Examiner has indicated that the claim recites incorporating a compound without mentioned the substance into which it is mixed. Applicant has amended the claim to recite incorporating the compound(s) into a base material, and respectfully requests that the Examiner withdraw the rejection of claim 8 under 35 U.S.C. §112. Support for the amendment can be found, for example, on page 2, lines 13-20 of the specification.

### **35 U.S.C. §102 Rejections**

Claims 8-10 have been rejected under 35 U.S.C. §102(b) as being anticipated by Allan *et al.* Specifically, the Examiner has indicated that Allan *et al.* teaches a method of preparing 1-methyl-3-isopropyl cyclopentyl wherein  $R^1 = R^2 = H$  and  $R^3 = OH$ . Applicant respectfully traverses the rejection.

Claim 8 recites a method of manufacturing a fragrance application that includes incorporating a compound of formula 1a into a base material. Allan *et al.*, on the other hand, discloses a method of making a specific 1-methyl-3-isopropyl cyclopentyl compound. However, Allan *et al.* does not teach either incorporating the compound into a base material, as claimed, or manufacturing a fragrance application (e.g., a perfume, household product, etc.). Applicant therefore respectfully requests that the rejection of claim 8 under 35 U.S.C. §102(b) be withdrawn.

Claim 9 recites the (1R,3S) enantiomer of the compound of formula I, as indicated by the bond orientation present in formula I. Allan *et al.* discloses the use of (+)-dihydrofenchyl alcohol as an intermediate, which has a different stereochemistry. Allen *et al.* also does not teach incorporating the compound into a base material or fragrance application. Applicant therefore respectfully requests that the rejection of claim 9 under 35 U.S.C. §102(b) be withdrawn.

Claim 10, as amended, does not encompass 1-methyl-3-isopropyl cyclopentyl wherein  $R^1 = R^2 = H$  and  $R^3 = OH$ . Allen *et al.* also does not teach incorporating the compound into a base material or fragrance application. Applicant therefore respectfully requests that the rejection of claim 10 under 35 U.S.C. §102(b) be withdrawn.

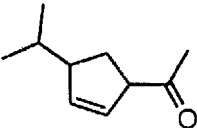
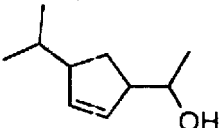
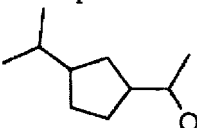
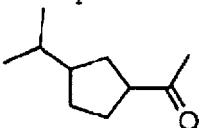
### **35 U.S.C. §103 Rejections**

Claims 1-7 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Allan *et al.* in view of Habib-Emil Eschinazi (U.S. 2,946,823). Specifically, it is alleged that Allan *et al.* teaches 1-methyl-3-isopropyl cyclopentyl wherein  $R^1 = R^2 = H$  and  $R^3 =$

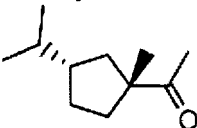
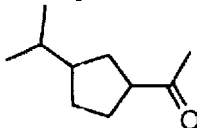
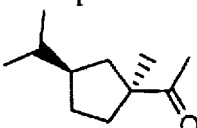
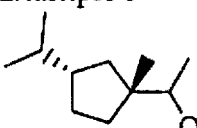
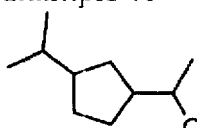
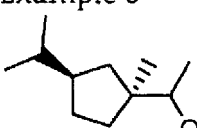
OH, that Habib-Emil Eschinazi teaches a homolog of the 1-methyl-3-isopropyl cyclopentyl compound that is used as a fragrance in soaps, and that the two references are analogous art and would motivate one to use the compounds of Allan *et al.* as a fragrance. Applicant respectfully traverses the rejection.

Allan *et al.* discloses the use of 1-methyl-3-isopropyl cyclopentyl wherein  $R^1 = R^2 = H$  and  $R^3 = OH$  as a synthetic intermediate in the context of determining whether suitably substituted cyclic 1:3 diols might undergo dehydration to open-chained aldehydes. Allen *et al.* thus discloses the existence of a specific 1-methyl-3-isopropyl cyclopentyl compound, but does not provide any teaching or suggestion of its use outside of chemical synthesis, let alone its use as a fragrance.

Habib-Emil Eschinazi discloses the preparation of methyl-(4-isopropyl-1-cyclopentenyl) ketone, and that this ketone can be used to prepare other products having desirable olfactory characteristics by hydrogenation and/or acylation. However, it includes no teaching or suggestion that the compounds could be methylated at the C-1 position or modified in other ways such as providing specific enantiomers while retaining desirable olfactory characteristics. For example, Applicant has demonstrated that small differences in the compounds described in Habib-Emil Eschinazi can result in dramatic differences in their olfactory characteristics:

<p>Example II</p> 	<p>Powerful odor suggestive of new mown hay and tonka beans</p>	<p>Example IV</p> 	<p>Example IV Terpineol minty note</p>
<p>Example VI</p> 	<p>Very fragrant flowery note suggesting lily of the valley</p>	<p>Example VII</p> 	<p>Example VII Rosy odor with, upon dilution, recalls that of orange blossoms.</p>

This difficulty in predicting the olfactory characteristics of these types of compounds is further emphasized by comparing the odor properties of the presently claimed compounds with those described in Habib-Emil Eschinazi:

Our compounds		US 2,946,823	
Example 3 	earthy/mossy, green, woody	Example VII 	Rosy odor with, upon dilution, recalls that of orange blossoms.
Example 4 	floral, agrestic, fruity, green		
Example 5 	floral, earthy/mossy, slightly terpineol/earthy	Example VI 	Very fragrant flowery note suggesting lily of the valley
Example 6 	hesperidic/citrus, fruity, green, fresh (grapefruit, rhubarb).		

In fact, the unpredictable relationship between molecular structure and odor is well known to those skilled in the art. See for example Brenna *et al.*, *Tetrahedron: Asymmetry* (2003) 14 pgs. 1-42; Sell, C.S., *Angew. Chem. Int. Ed.* (2006) 45, pgs. 6254-6261; and Winter *et al.*, *Helvetica Chimica Acta* (2005) 88, pgs. 3118-3127, included as Exhibits A, B & C, respectively.

Brenna *et al.* review the different odour response of chiral odorants, providing numerous examples of enantiomers that differ dramatically in their odour properties (see for example Table 1.). Brenna *et al.* notes on page 2 that "many theories have been developed to explain how an odorant generates a particular signal this is interpreted by the brain as an odour, but none of them has been able to explain all of the experimental evidence," indicating that the science of odour chemistry remains highly unpredictable.

Sell directly addresses the unpredictability of odor, stating that "despite a great deal of research on structure-odor relationships, prediction of the odor of a novel molecule remains a statistical exercise and models only provide a probability of the character threshold, and intensity. Surprises are still commonplace, and serendipity continues to be an important factor in the discovery of novel fragrant molecules." Winter *et al.* specifically demonstrates the unpredictability and serendipitous nature of a group of aryl carboxaldehydes which provided scents ranging from "old shoes" to "floral."

Because Habib-Emil Eschinazi provides no suggestion to modify the compounds to result in the presently claimed compounds, and because of the well-known unpredictability of the odor of compounds, one skilled in the art would not be motivated to evaluate the compounds of Allan *et al.* for their fragrance properties. This is particularly true in view of the large number of compounds that can result from small modifications of the compounds described in Habib-Emil Eschinazi. Accordingly, and further in view of the reason that the fragrance properties of the compound of Allan *et al.* are unpredictable, Applicant respectfully requests that the rejection of claims 1-7 under 35 U.S.C. 103(a) as obvious over Allan *et al.* in view of Habib-Emil Eschinazi be withdrawn.

Based on the foregoing amendments and remarks, it is respectfully submitted that the present application is in a condition for allowance, and the issuance of a formal Notice of Allowance is hereby requested. Should the Examiner have any questions about the above remarks, the undersigned attorney would welcome a telephone call.

Respectfully submitted,



Joseph G. Curatolo, Esq. (Reg. No. 28,837)  
Raymond N. Russell, Ph.D. (Reg. No. 52,185)  
Curatolo Sidoti Co., LPA  
24500 Center Ridge Road, Suite 280  
Cleveland, OH 44145  
Telephone: 440.808.0011  
Facsimile: 440.808.0657  
Customer No. 23575  
Attorney for Applicant

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Date